

III. *A History of Three Species of Cassida.* By the Rev. William Kirby  
of Barham, A. L. S.

Read January 7, 1794.

CONVINCED of the truth of Mr. Marsham's observation \*, that in order to form a complete system of entomology, we ought to be acquainted with the history of the different states of each particular insect; I take the liberty of offering to the Linnean Society an account of three species of *Cassida*, which I have had an opportunity of tracing through all their various metamorphoses.

The insects of the *coleopterous* class in general are little known in their previous states, on account of the difficulty of discovering their natural situation, and proper food. Yet this difficulty does not extend equally to all of them; for those of which I am about to give the history, require less attention to nourish, and bring to their perfect state, than most even of the *lepidopterous* insects: there is no danger of their escaping, even though they be not confined in a box. All that the breeder has to do, is to put a piece of the plant upon which he discovers them into a phial of water, taking care to supply them with fresh food when necessary, until he finds that they are preparing to change into the *pupa* state, which he may easily know by their ceasing to feed, and by their casting off the covering of excre-

\* See his ingenious observations upon the *P. B. Lubricipeda* of Linneus, Linn. Trans. vol. i. p. 68.

ment:

ment under which they are concealed: then he is to take the leaf to which they have fixed themselves, and put it under a glass until the *imago* is disclosed, which will be in ten or twelve days.

I shall begin with some preliminary observations, that extend to all the species which I have had an opportunity of observing.

The larvæ of this genus are all surrounded with marginal radii, and these radii are usually ciliated, so as to give the insect, *sub lente*, a very singular and elegant form. They are also remarkable for being *merdigerous*, and for this purpose are furnished with some long stiff bristles just above the anus, upon which they deposit their excrement; and thus form a covering, not indeed very delicate, which I imagine serves to conceal them from the birds, and which I remember that accurate observer Reaumur noticed in the *C. viridis*. This shield, by means of the above-mentioned bristles, the little animal has the power of elevating or depressing; so that sometimes it stands at a right angle with the body, and at others is so closely applied to it, as to conceal the insect from any but an entomological eye.

In the *pupa* state, the head of these insects is enclosed in a shield, fringed with marginal radii. The abdomen is radiated like that of the larva, and is furnished with four *spiracula* on each side. It fixes itself by means of the *exuviae* of the larva. The *imago*, when it discloses itself, makes its way through a transverse fissure of the shield.

I. LIRIOPHORA. *C. nigra supra viridis, thorace emarginato, elytrorum futurâ basibus interne punctisque duobus nigris.*

*Larva.* Viridis, colore dilutiori punctata: radii lividi: caput nigrum, regione intra oculos viridi-nigro punctata.

*Pupa.*

*Pupa.* Saturate viridis spiraculis albis: clypeus emarginatus, respectu corporis latus: abdominis radii ovati acuminati.

*Imago.* Caput nigrum: antennæ subclavatæ, pallidæ, apicibus nigris: thorax subemarginatus, viridis, punctulatus: elytra viridia, macula longitudinali communi, quæ utrinque ad eorum insertionem dilatatur, atque florem lili cujusdam non injucunde refert, punctisque nigris: scutellum viride: abdomen nigrum ano pallido: pedes pallidi femoribus nigris.

Sequenti simillima, differt tamen non solum maculis elytrorum, sed etiam larvâ viridi, nec lividâ: pupæ clypeo emarginato nec integro: item imaginis thorace emarginato.

Nomen suggestit D. Præses. Habitat in Serratula arvensi.

2. VIRIDIS? C. nigra supra viridis, thorace integro.

*Larva.* Cinerea radiis nigris: caput nigrum: anus obtuse acuminatus: spiracula utrinque octo nigra.

Adhuc juvenis radii lividi, dorsique medium virescit.

*Pupa.* Fusco pallidoque varia: clypeus integer: abdominis dorsum utrinque lineis duabus punctorum nigricantium, quorum interiora majora: spiracula quatuor alba.

In pupæ exuviis albescunt radii.

Habitat in Serratula arvensi.

Observationes. An hæc species revera sit C. viridis perill. Linnei

plurimum hæreo: illius enim larva secundum Schrankium (Enum. Inf. Austr. 92.) viridis est, hujus autem cinerea. C. viridis in plantis verticillatis et Carduis habitare perhibetur; hanc nunquam inveni vel in plantis verticillatis vel in Carduis, sed solummodo in Serratula arvensi, quâ frequentissima deprehenditur ineunte Augusto. Litem dirimant entomologi cordati.

3. MACULATA. C. nigra supra viridis; elytris rarius: futura dorsali confertius: nigro maculatis.

*Larva.* Viridis, maculâ dorsali oblongâ nigrâ, lineis duabus longitudinalibus, parallelis, flavescens, ornatâ; has lineas contrahit vel dilatat animal dum pascit: caput nigrum linea viridi in tres lineolas exeunte: cauda bifida setis fasciculo spinularum coronatis. Hunc fasciculum deponit insectum in pupam conversurum.

In hac specie stercus, quod admodum singulare, ramofo filamentosum est.

*Pupa.* Viridis puncto utrinque nigro.

Puparum exuviam niveam, punctis nigris restantibus.

Habitat in Inulæ dysentericæ foliis.

*Observationes.* Huic speciei quamplurimis simillima Cassida Murræ perill. Linnei. Maculæ in utraque sibi invicem adamussim respondent, adeo ut varietatem C. maculatæ, C. Murræam crediderit D. Geoffroyus. Habitat hæc in Inula dysenterica, illa in Helenio. E pluribus larvis a me captis

ne una quidem *C. Murræa* exclusa est. Determinent feliciores entomologi quibus larva posterioris arrideat. In Helenio quærenda. Imago semel mihi lecta in prato quodam, semel etiam ab amico J. Coyte Gippovicensi entomologo ingenioso.